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MOTORCYCLE AREA DESIGN AND LOCATION: IMPACTS ON THE RECREATIONAL EXPERIENCES OF OFF-ROAD NONRIDERS[1]

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ABSTRACT

This study analyze some of the psychological and sociological effects of constructing motorcycle riding areas adjacent to fixed-site campgrounds. Findings include rider and camper profiles, self- and camper-perceptions of riders, and preferences and satisfactions of campers and riders concerning the proximity and design of riding areas. Conclusions are derived, and recommendations are presented for motorcycle area design, management of cycle areas, and the motorcycle industry.

PROBLEM AND OBJECTIVES

Motorcycle riding has increased rapidly, as an adjunct of family camping and as a sport itself. This has created problems through (a) annoyance of nonriding campers, and (b) inadequate number and size of areas for off-road riding.

Therefore, the goal of this research was to test the acceptability of two solutions: (a) cycle riding areas adjacent to campgrounds, and (b) large areas for off-road vehicles. Specific objectives supporting the goal were:

1. Determine and discuss specified socioeconomic characteristics of campers and motorcycle riders.
2. Determine differences in preference for riding area features as related to socioeconomic characteristics.
3. Determine the effect of riding area design on the satisfactions of riders in three different motorcycle areas.
4. Determine the differential impact of motorcycle areas on both riding and nonriding recreationists in adjacent campgrounds in terms of their satisfaction with the campground visit.
5. Compare the self-perception of motorcycle riders with the nonriding campers' perception of motorcycle riders.

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This work was necessary to optimize compliance with President Nixon's Executive Order 11644 on off-road vehicles, and to maximize the satisfactions of both riding and nonriding campers.

METHODOLOGY

Data were gathered during July and August of 1962 at Land Between the Lakes National Recreation Area (LBL) in western Kentucky/Tennessee. Riders were interviewed at an extensive off-road-vehicle area and two small motorcycle areas adjacent to campgrounds (Piney and Hillman Ferry). Campers were interviewed at three family campgrounds. The two smaller cycle areas were adjacent to two of the campgrounds; each riding area was distinctively different. The sample included 104 riders and 143 campers.

Socioeconomic status was coded according to a scale developed by Otis Dudley Duncan (Reiss, 1957). A scale developed by Hope (1960) was employed to measure riders' self-perceptions and campers' perceptions of riders.

Tests of data employed measures of central tendency, dispersion, and Chi-square. Details are available within reports by Fillmore (1973), and Bury and Fillmore (1974).

LIMITATIONS

Limitations of this study were related to three factors--respondents, timing, and geography. Since the research instrument was standardized for the sixth grade, all riders under eleven years were excluded from the sample. The resultant bias was not serious; it is estimated that riders under eleven constituted less than 5 percent of the riders at LBL.

The research was conducted during only the first six weeks of operation of the riding areas at LBL. The low levels of use during this time made some statistical calculations impossible, and precluded speculation on other factors such as preferences concerning number of other riders, and satisfactory specification of vegetative, topographic, and/or distance buffers between riding areas and campsites.

The study was conducted in a fairly restricted area managed by one federal agency and thus does not permit unrestricted extrapolations to other agencies and areas.

CONCLUSIONS

Socioeconomic Characteristics

Riders and campers were found to be very similar; mean age of campers was 41.1 years as compared with 38.4 years for riders. Socio-

economic status was estimated by the Duncan Scale; mean values were 53.2 for campers as compared with 52.4 for riders. However, campers travelled much farther than riders to reach the study area; the mean distance for campers was 300 miles as compared with 190 miles for riders.

Approximately 85 percent of riders were male. Two-thirds of all riders were in the middle class, as judged by their ranking in the fourth through eighth deciles of the Duncan Scale. One-third of the riders were less than 16 years old, another third were 16 through 39, and one-fifth were 40 through 49.

Impact of Motorcycle Area on Campers and Riders

Land Between the Lakes provides opportunities for most of the popular outdoor recreation activities. Therefore, the effect of an off-road motorcycle area is rather small in terms of drawing more people to the area.

No one indicated that a motorcycle riding area alone was attractive enough to cause him to come to Land Between the Lakes. This hypothesis, however, could not be accurately tested since so few people knew about the riding areas before they were interviewed.

None of the nonriders found the motorcycle riding areas undesirable enough to prevent their coming to the campgrounds. In fact, most felt that the riding area was a desirable feature, because cyclists rode there rather than in the camping areas.

Some campers found the idea of a motorcycle area disturbing. Most of these were interviewed at the family campground without a riding area, where 17 percent implied that they would rather be in a campground without a riding area. Three facts brand this as an uninformed statement. First, almost two-thirds of the above-mentioned group had never been to Land Between the Lakes before. Second, none had been to the campgrounds where motorcycle areas had been constructed. Third, analysis indicated that this group differered from other campers only in their reaction to the idea of areas for motorcycles in campgrounds.

At Hillman Ferry and Piney, where campers had a chance to be exposed to motorcycle areas, a large majority of the campers were favorably disposed toward riding areas.

The writers attempted to use a sound level meter to record decibel readings of motorcycle noise in the campgrounds while cycles were in the adjacent riding area; the meter detected no motorcycle noise.

When campers were asked to name and rank the three main disadvantages of having a motorcycle area, "noisy" led all the rest by an extremely wide margin. They listed "noisy" in spite of the fact that campgrounds seemed less noisy after the motorcycle areas were opened. Their answers were not usually based on experiences in the campground, but on biases formed before coming.

Perception of Motorcyclists by Riders and by Campers

Most campers saw motorcyclists as self-centered, anti-social, inconsiderate of the rights and feelings of others, highly motivated, and unintellectual.

In contrast, the rider saw himself as socially accepted, highly motivated, and considerate of the feelings of others; he rated himself lowest in the intellectual dimension.

Effects of Resource Characteristics on Rider Satisfactions

Results of the rider evaluations of riding areas led to the following conclusions:

1. Terrain. Although some novices felt it too hilly, the greatest satisfaction with terrain was evinced by riders at Turkey Bay with its slopes up to 45 percent. The other two areas provided a maximum slope of only 15 percent.
2. Rockiness of trails. Some riders at Turkey Bay considered the trails too rocky. This comment was made in most cases by novices. Experienced riders seemed to be undisturbed by rocks. Many liked the added challenge posed by a rocky trail.
3. Dustiness of trails. Trails were seldom dusty because of frequent rains and because vegetation often covered most of the trail width. Therefore, test data could not reveal the effect of dustiness on rider satisfaction.
4. Width of trails. The trail width was generally six feet. At Hillman Ferry, however, some areas of the trail were widened. This failed to provide the challenge sought by riders.
5. Radius of turns. Riders were generally satisfied with the tightness of turns. However, the recommended radius cannot be easily specified because satisfaction involves both radius and trail width. If the trail is wide, the turns must be tighter than turns would have to be on a narrow trail.
6. Number of turns. Satisfaction with number of turns is related to trail width and radius of turns. Disappointment was expressed with the combination of relatively few turns, wider trails, and longer curve radii at Hillman Ferry; satisfactions were generally obtained with the reverse conditions at Piney.
7. Number of jumps. About one-third of the riders wished to have more jumps. No jumps had been built on any of the test sites; existing ground conditions provided the only possibilities for jumps. Rider response to this question would be very subjective, because the rider's concept of a jump is related to his experience and the capabilities of his machine.
8. Other riders. Most riders appear to desire companionship when they ride. Novice riders seemed to prefer more other riders than experienced cyclists did. Generally, too few motorcyclists were riding to judge the point at which a rider thought there were too many riders.

9. Open field riding. Very few riders preferred open field riding to trails. Some novices preferred to learn in a large open area.

10. Adult supervision. Many of the adults felt supervision to be desirable, but not for themselves.

11. Overall evaluation. No significant variation could be detected among the riding areas in response to this question. The total of those who rated the areas as "good" and "one of the best" was 65 percent. The writer compared this variable, "In how many different areas have you ridden?" The manner in which novices rated the area was not significantly different from the way the area was rated by experienced riders.

Effect of Socioeconomic Characteristics on Preferences

No significant difference existed in ranking of trail design preferences by those in the ten Duncan decile groups. Age, riding area, and gender were also tested for significant differences in trail design preferences. Gender was the only factor in which significant differences could be detected. For example, every group except females rated "variety of terrain" as the most important; females rated "absence of dust" as most important. It was concluded that one general design type could optimize recreation experiences for all types of groups except females.

RECOMMENDATIONS

The findings suggest several recommendations to assist management in widening the range of recreation opportunities by meeting the desires of riders as well as campers. The reader is cautioned that these recommendations should be regarded as preliminary because they are based on only the first six weeks of motorcycle area operation.

1. Campground owners and operators should provide riding areas near some, but not all, campgrounds. At Land Between the Lakes, two-thirds of the campgrounds had riding areas nearby. This seemed satisfactory.

2. Most riding areas should be designed according to factors preferred by males; women constituted less than 14 percent of the sample of riders.

3. Designation of areas of varying difficulty should be by experience rather than by age; rider evaluations of area design factors showed no significant variation by age.

4. Riding areas should be screened from adjacent campgrounds, both visually and audibly, by intervening hills and/or vegetation.

5. At least 30 acres should be available for the riding area. This will provide space for adequate trails and for a buffer zone around the area.

6. Trails should usually be at least 600 feet to the nearest camping site. This distance may be shortened if substantial hills

and/or vegetation lie between the two areas. The distance may need to be longer if prevailing winds blow from the riding area toward the camping sites.

7. Trails should ordinarily not be wider than six feet. To provide sufficient challenge for riders, curves on wider trails should have smaller radii than those on narrower trails.

8. Trails should traverse available hills. Novices considered hills of 30 to 40 percent too steep, while experienced riders thought the 5 to 10 percent slopes of the other two sites were not steep enough.

9. Trails should be located to maximize the number of natural jumps available from the existing topography. Ten small jumps in a one quarter-mile course were not considered excessive by the riders. Constructing artificial hills and jumps may be inadvisable except in the context of a commercial competition course.

10. Greater challenge may be provided by increasing trail length and by building more turns and tighter turns. Respondents at LBL indicated that 11 turns in one-quarter mile was not too high.

11. Trails should be designed to place demands on the rider's ability to handle his machine. Not only is a tortuous trail more challenging, but it uses less area per linear foot of trail. The radius of the turns should vary; respondents indicated that turns with a radius of 30 feet were not too tight.

12. Open field riding should receive minimal attention. A large cleared area may be desirable for those learning to ride, but it fails to provide the challenge most riders seek.

13. Areas for experienced riders should be constructed in taller vegetation; parts of the trail should be separated by vegetation, distance, and/or variations in terrain to create a feeling of isolation from other cyclists. Inexperienced riders seem to prefer seeing other riders. This preference may be actualized by designing the trail so that parts of it come close together, by trimming intervening vegetation, or by constructing trails in an area of low vegetation.

14. Rockiness was approved by experienced riders, but not by novices. Rocky areas need not be cleared for cycle use if rocks are cherty plates less than 5 inches in length.

15. Trails should be designated for one-way traffic. Direction should be indicated by signs and/or by highlighting the entrance and hiding the exit. Many respondents complained of being unsure of the intended direction of travel and of meeting cyclists going the opposite way on trails.

Implications for Management

1. Adult supervision might be provided for juveniles. The concept of supervision was considered desirable by the adults, but not for themselves.

2. Regulations and area design should accommodate larger as well as smaller motorcycles. Many riders of larger cycles wanted to use them in the small riding areas, even though these larger cycles were

not designed for off-road use.

3. Enforcement will probably be required to prevent unnecessary cycle riding on campground roads and trails. Ideally, the dirt bikes should be either pushed or transported from the campsite to the riding area. However, research indicated that this seldom happened, especially if the rider was licensed and was operating a street-legal machine.

4. Motorcycle exhaust noise should be regulated at the factory, at the dealership, and in the field. Some cyclists tamper with their exhaust equipment and consequently raise noise levels. Nonriders disliked noise more than any other factor associated with cycling. Since noise levels based on decibel readings may be economically and practically difficult to measure, it is recommended that all loud and unusual exhaust noises be prohibited, and that the regulation be aggressively enforced.

5. Communication should be encouraged between riders and campers in order to avoid potential conflicts between the two groups. Once communication is established, their basic socioeconomic similarities may help to eliminate unfavorable or false preconceptions held by one group about the other. This communication may be established by (1) involving campers as well as riders in the planning of riding areas and the development of operating rules, (2) apprising campers of reasons for providing cycle areas, and (3) offering motorcycle lessons to interested nonriding campers.

6. All riders should have easy access to publications which briefly explain rules and regulations, location of riding areas, and designation of trails according to experience. This could help to minimize unacceptable behavior by riders.

7. Campers should be informed of reasons for constructing a motorcycle trail. This would apprise them of potential benefits, such as less noise and disturbance in the immediate camping area.

8. If administrators wish to stimulate cycling, they should encourage private contractors to rent motorcycles. Those who live more than a day's drive away seldom bring their cycles to the area.

Implications for the Motorcycle Industry

1. The industry should inform the public concerning noise reductions already achieved through motorcycle redesign. Many people are unaware that motorcycles are now quieter than in previous years.

2. The industry should direct advertising toward counteracting the image of motorcyclists as dim-witted and inconsiderate of the feelings of others. This objective can be reached by emphasizing riding as a family sport enjoyed by people of all ages, backgrounds, and occupations.

3. Advertising should be directed toward those in the socio-economic middle classes. Almost two-thirds of all riders were found within the fourth through eighth Duncan Scale deciles.

4. Advertising for smaller machines should be directed toward younger riders. Although younger riders may not be the purchasers, they may well be the purchase initiators.

LITERATURE CITED

Bury, Richard L. and Edgar R. Fillmore. 1974. Design of Motorcycle Areas Near Campgrounds: Effects on Riders and Nonriders, Technical Report # 6, Department of Recreation and Parks, Texas A&M University. College Station, Texas, the Department, 61 pp.

Fillmore, Edgar R. 1973. "Motorcycle Riding Areas Adjacent to Camping Sites: Impacts on Satisfactions of Riders and Nonriders." Unpublished dissertation submitted to Graduate College, Texas A&M University. 113 pp.

Hope, Lannes. 1960. "The Background of Vocational Choice in a Denominational University." Unpublished dissertation submitted to Graduate College, University of Texas.

Reiss, Albert J. Jr., 1961. Occupations and Social Status. New York, the Free Press of Glencoe, Inc., pp. 263-275.